

## PATENT COOPERATION TREATY

REC'D 20 APR 2001

PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 4421/KH/cvb	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP99/09719	International filing date (day/month/year) 09/12/1999	Priority date (day/month/year) 08/01/1999
International Patent Classification (IPC) or national classification and IPC B01D39/20		
Applicant N.V. BEKAERT S.A. et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I     Basis of the report
- II     Priority
- III     Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV     Lack of unity of invention
- V     Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI     Certain documents cited
- VII     Certain defects in the international application
- VIII     Certain observations on the international application

Date of submission of the demand 13/07/2000	Date of completion of this report 18.04.2001
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Smith-Hewitt, L Telephone No. +49 89 2399 2995



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP99/09719

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, pages:**

1-7                   as originally filed

**Claims, No.:**

1-11                  as originally filed

**Drawings, sheets:**

1/1                  as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description,        pages:
- the claims,              Nos.:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/EP99/09719

- the drawings,      sheets:
5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)): *(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*
6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)      Yes: Claims 1-11  
                      No: Claims

Inventive step (IS)      Yes: Claims  
                      No: Claims 1-11

Industrial applicability (IA)      Yes: Claims 1-11  
                      No: Claims

2. Citations and explanations  
**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP99/09719

**1. Re: Item VIII**

- 1.1. The description clearly describes the layered filtering structure as being 'adapted for micro-filtration purposes' (p.1, I.4-5, I.23-25)). As Claim 1 lacks this feature, its subject-matter may be read onto any layered filtering structure. The requirements of Article 6 PCT with respect to the clarity of the claims are therefore not fulfilled, as claim 1 appears to lack a feature essential to the definition of the structure.
- 1.2. The expressions 'first layer, most close to the filter inlet side' and 'second layer, closer to the filter outlet side' leave doubt in the readers mind as to whether the device being claimed is a filter with a layered filtering structure or just the layered filtering structure. The requirements of Article 6 PCT are therefore not fulfilled. In order to clarify the claim, these expressions could be replaced by the description wording 'first layer, at the upstream side' and 'second layer, at the downstream side' (p.1, I. 32-35).
- 1.3 Dependent claim 9 is unclear, firstly because the word 'obtainable' is too vague and secondly because the claim appears to relate to a method step rather than a device feature. The requirements of Article 6 PCT are therefore not fulfilled.

**2. Re: Item V**

- 2.1 Document D1 (EP-A-0.561.001) discloses a layered filtering structure, comprising at least a first layer (3) and a second layer (2), each layer comprising a web of metal fibres which has been sintered (cf. p.5, I.37-39, p.5, I.57, p.7, I.16) said two layers being in contact with each other. Although not specifically disclosed as such, the parameters of first layer porosity below 55%, and second layer porosity at least 20% greater than the porosity of said first layer lie within the suitable porosity ranges quoted in the bridging paragraph p.6-7 and on p.5, I.31-34. The subject matter of claim 1 therefore appears to lack an inventive step in the sense of Article 33(3) PCT.
- 2.2 Steps (a) to (e) of the method described in claim 10 may be read onto the process described in document D1 as follows: A first layer (2) is sintered and compacted (p.5, I.35-36), prior to a second web of metal fibres being provided and brought together with the first layer (p.5, I.54-p.8, I.32). The layered assembly is then sintered (p.8, I.33-41). Furthermore, given the suitable ranges of porosity

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

---

International application No. PCT/EP99/09719

disclosed in the document, the second layer could have a porosity which is at least 20% higher than the porosity of the first layer. Independent claim 10 therefore appears to lack an inventive step in the sense of Article 33(3) PCT.

- 2.3 Document D1 further discloses suitable sizes for both layers of fibres (0.5-4 $\mu$ m; p.6, I.14-15 and 4-20 $\mu$ m; p.5, I.45-49) and the use of a 'plurality of mesh' (p.5, I.50-55) in order to maintain the strength of the support layer. The additional subject matter of dependent claims 3 and 6 is therefore not inventive (Article 33(2) PCT).
- 2.4 Document D2 (WO94/14608) similarly discloses a layered filtering structure comprising a first layer and a second layer (p.2, I.27-31), each layer comprising a web (one woven and one non-woven) of metal fibres which has been sintered. No specific statements about the overall porosity of the webs is disclosed, however, suitable weights of the non-woven portion are disclosed in the example (p.6) as being 300g/m<sup>2</sup> or 600g/m<sup>2</sup>. The additional subject matter of dependent claim 4 is therefore not inventive.
- 2.5 Given the disclosures of documents D1 and D2 and the scope of the skilled person to conduct tests in order to optimise the construction of the filter structure, the additional subject matter described by dependent claims 2, 5, 7, 8 and 11 does not appear to include any feature which could be regarded as being inventive in the sense of Article 33(3) PCT.

**3. Re: Item VII**

- 3.1 The claims are not in the two-part form in accordance with Rule 6.3(b) PCT.